Shapes

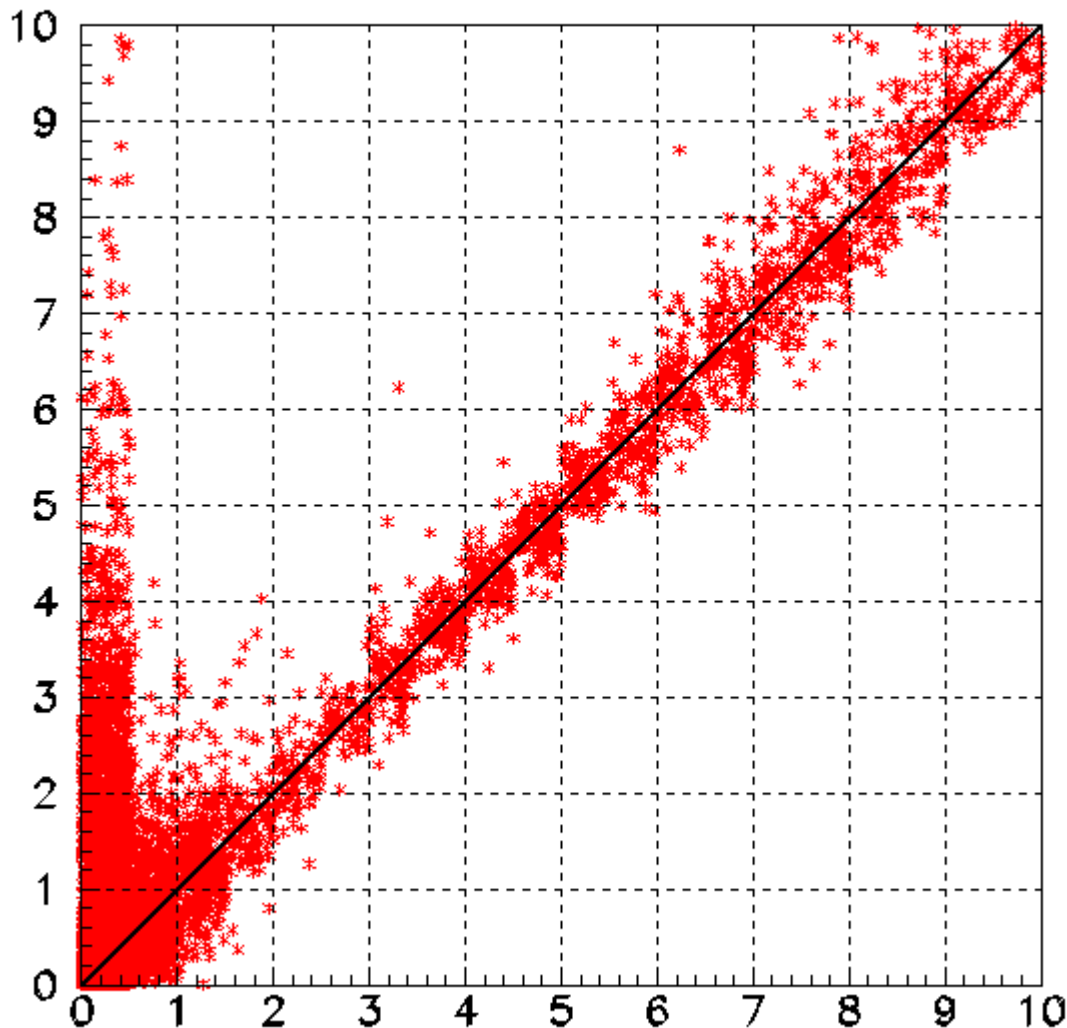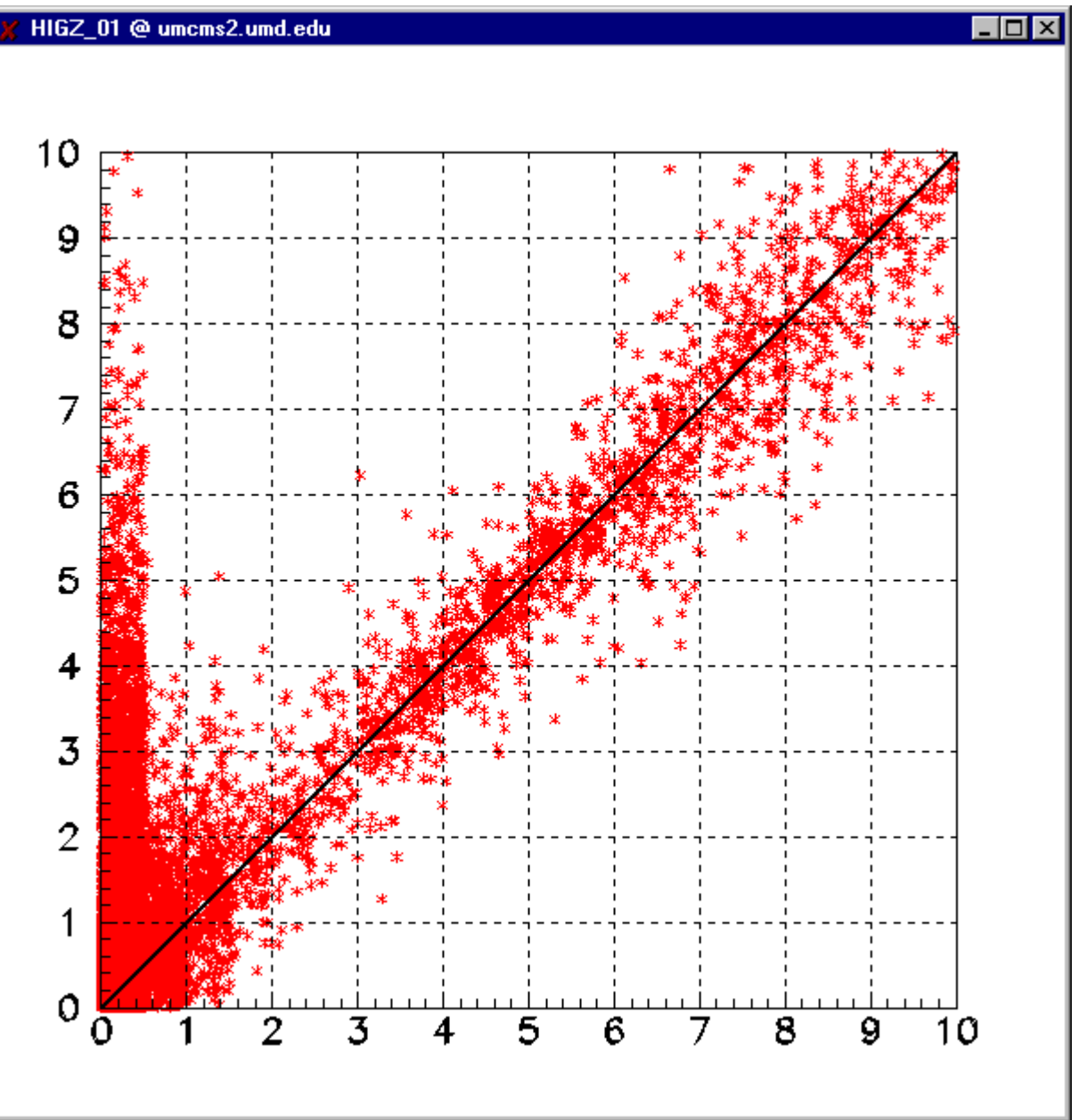"old" hcal

"new" hcal

Old hcal

Consider pions with Et=40 GeV, eta=4.0.

x-axis is true et deposited by pion a depth-segment of a tower. Y-axis is reconstructed et.
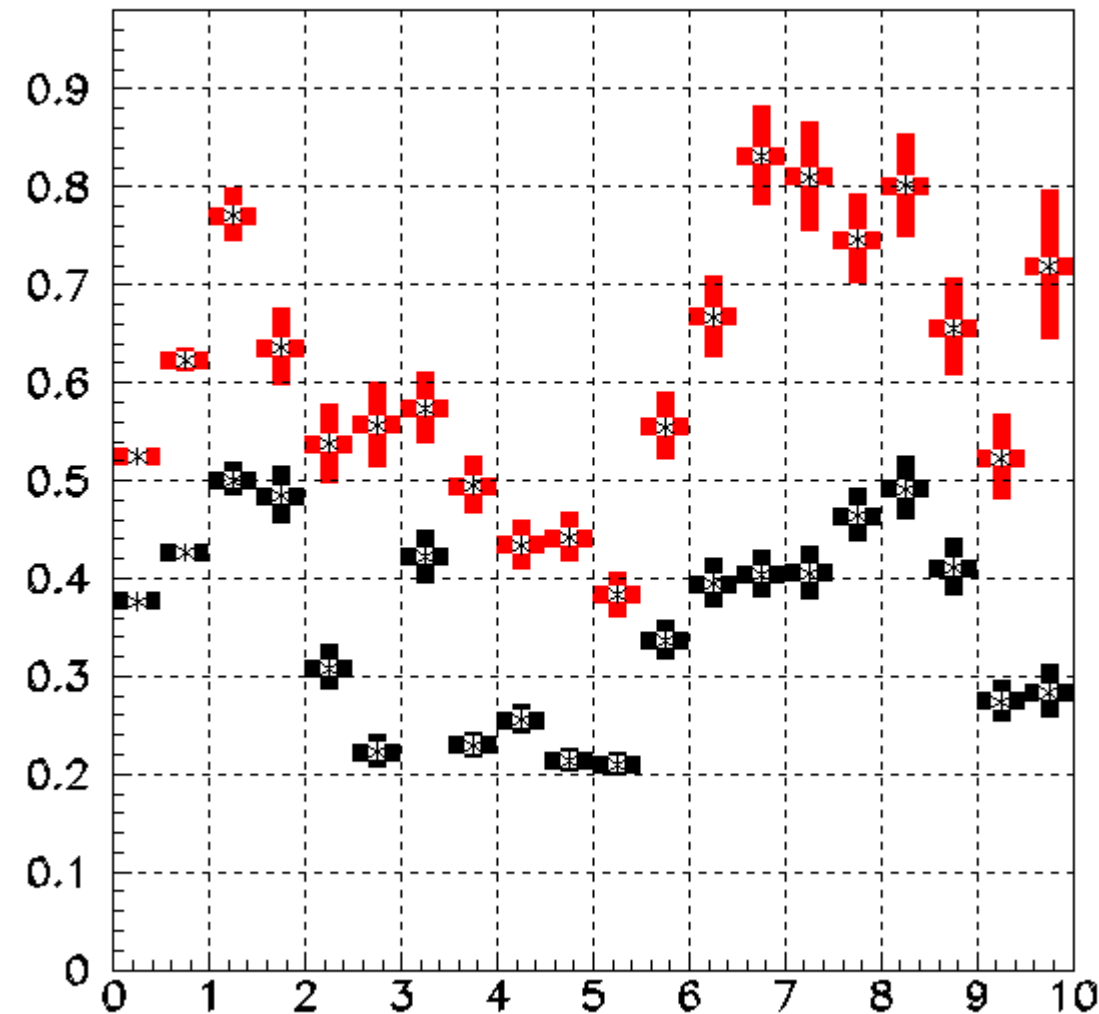
plot is with default ORCA HCAL shape

New

same plot with "new" shape

Old versus new

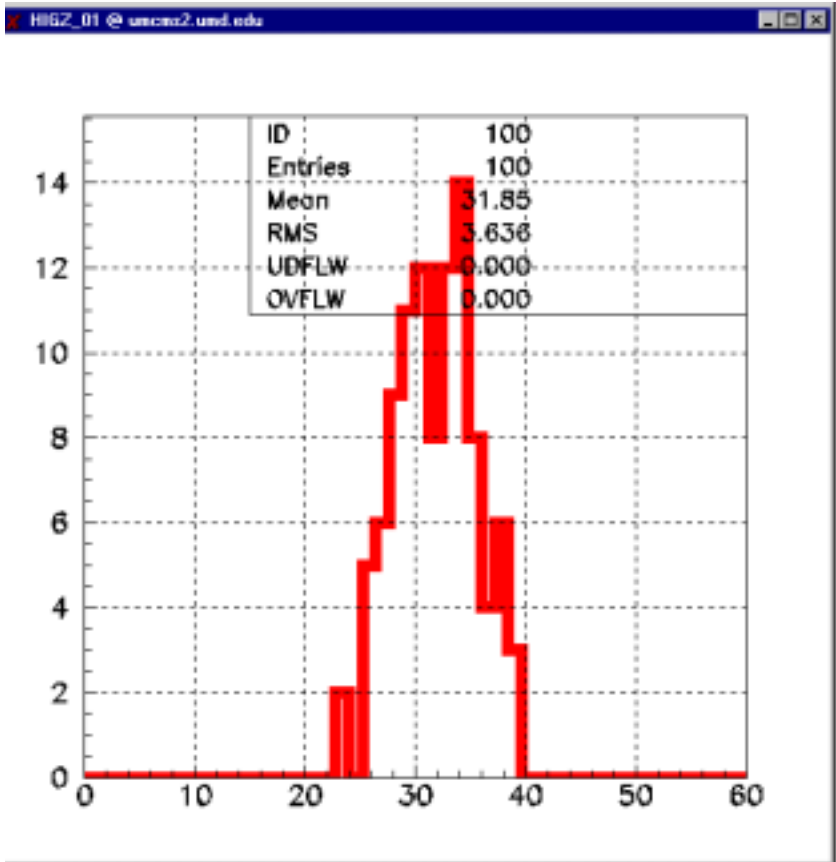X-axis. True et deposited in a depth segment of an hcal tower (digi)

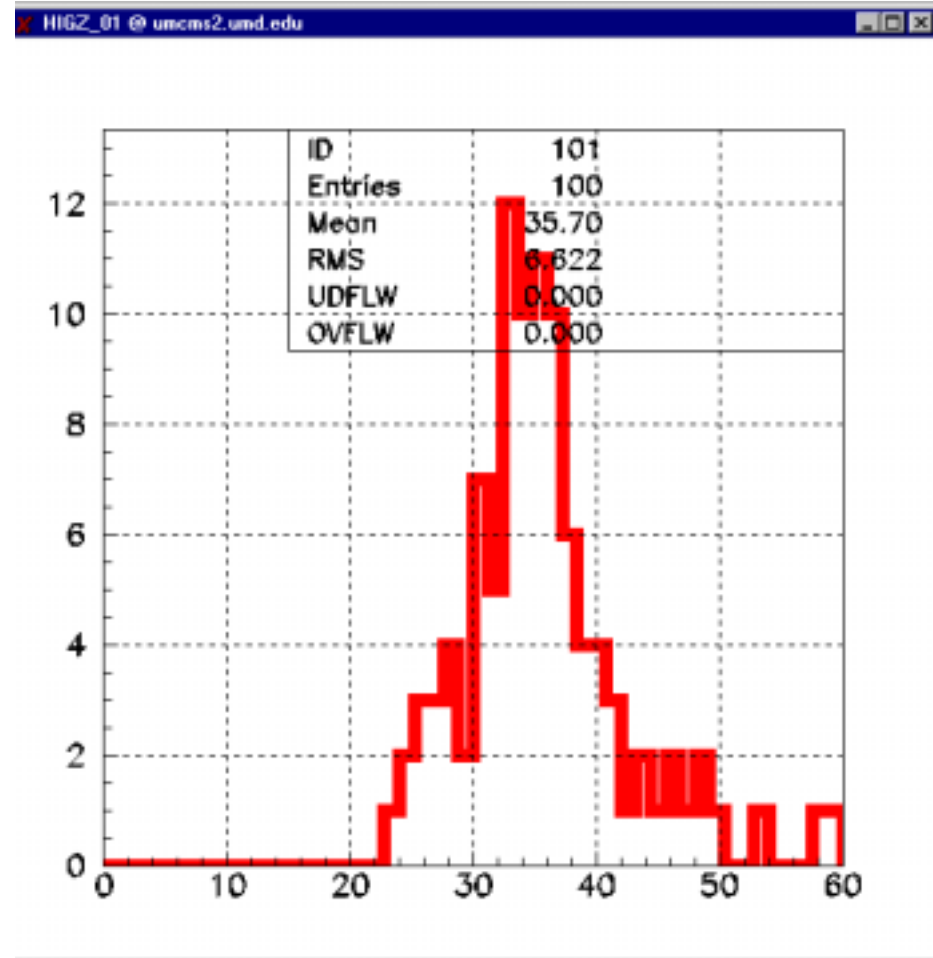y-axis: rms of reconstructed et

black: old hcal

red: new hcal

checks
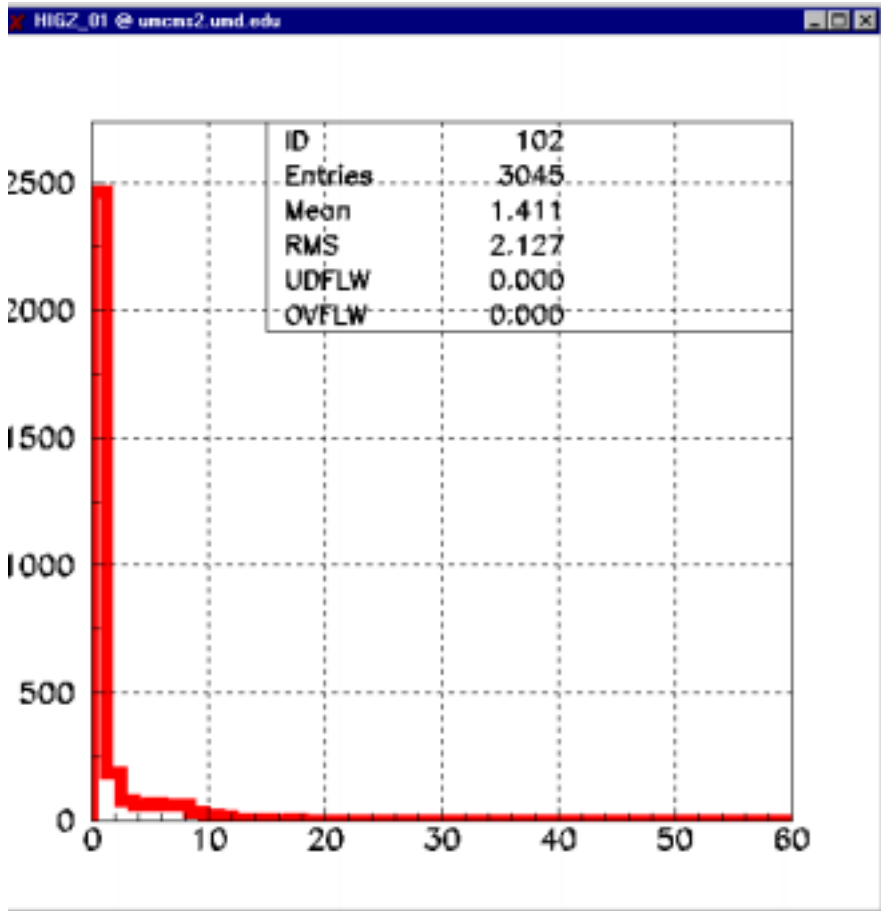

sum et of "real" digi Et

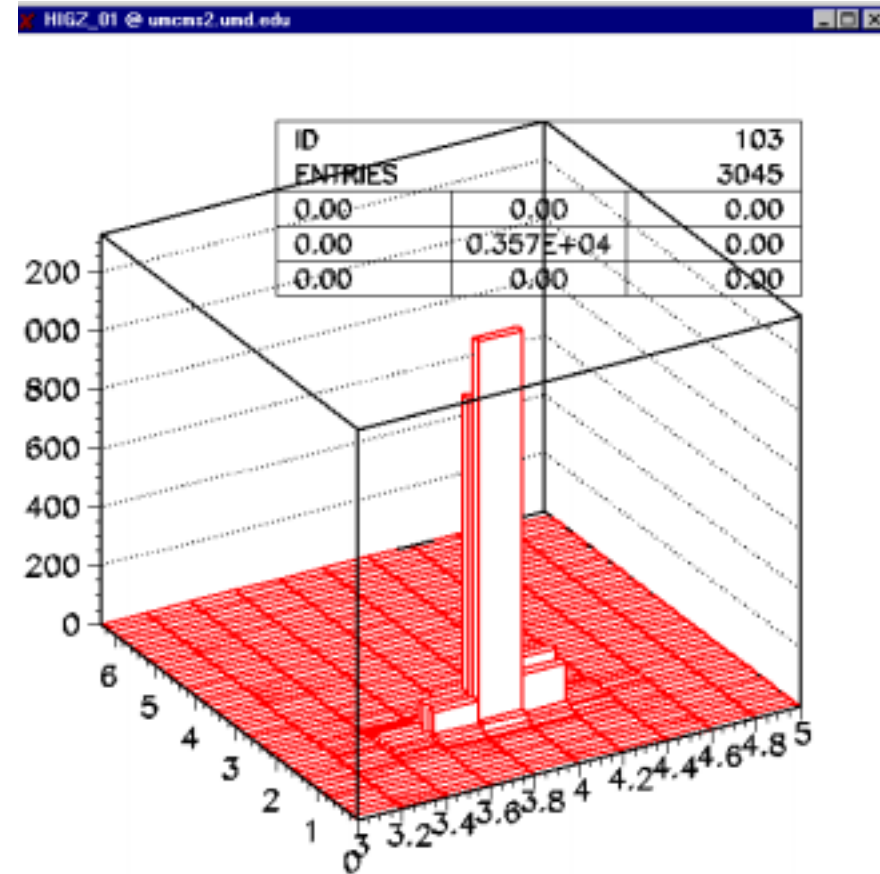sum et of digi Et after reconstruction for digis whose "real" et >0

checks

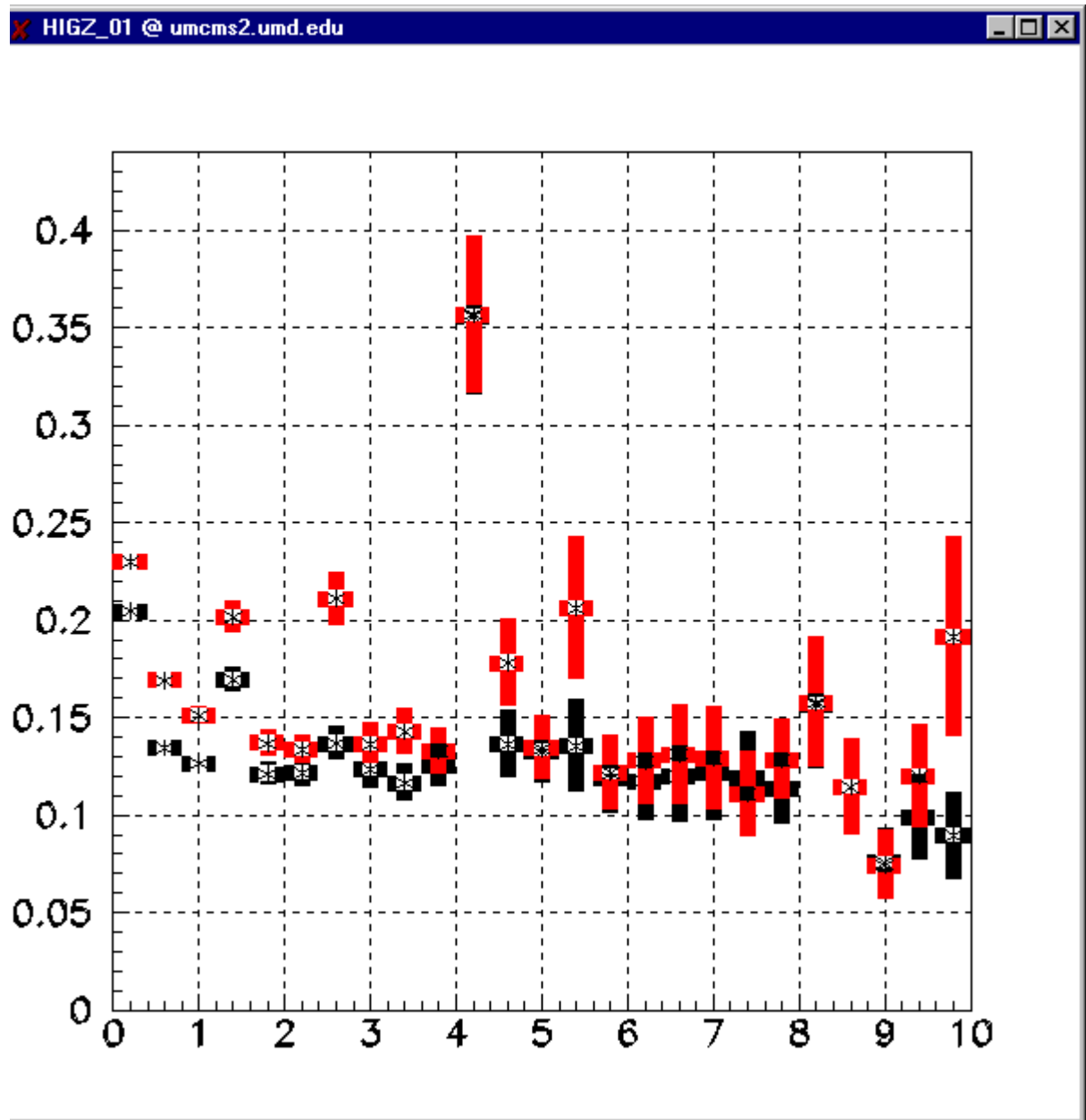| ID	102
Entries	3045
Mean	1.411
RMS	2.127
UDFLW	0.000
OVFLW	0.000

eta and phi of digis, weighted by digi et

individual digi ets for digis whose "real" et>0 (note, about 30 digis per pion, since 100 pions in sample)

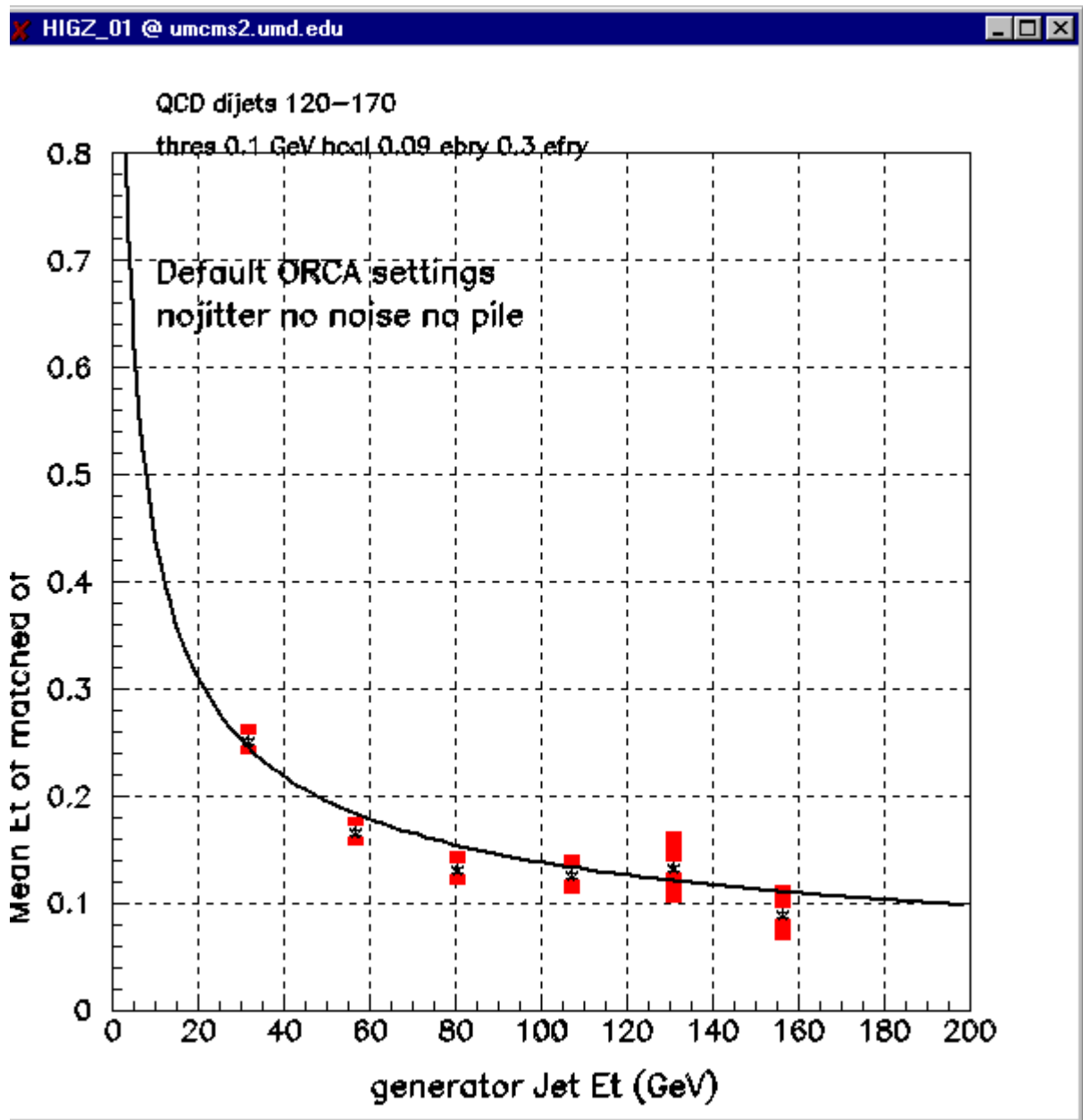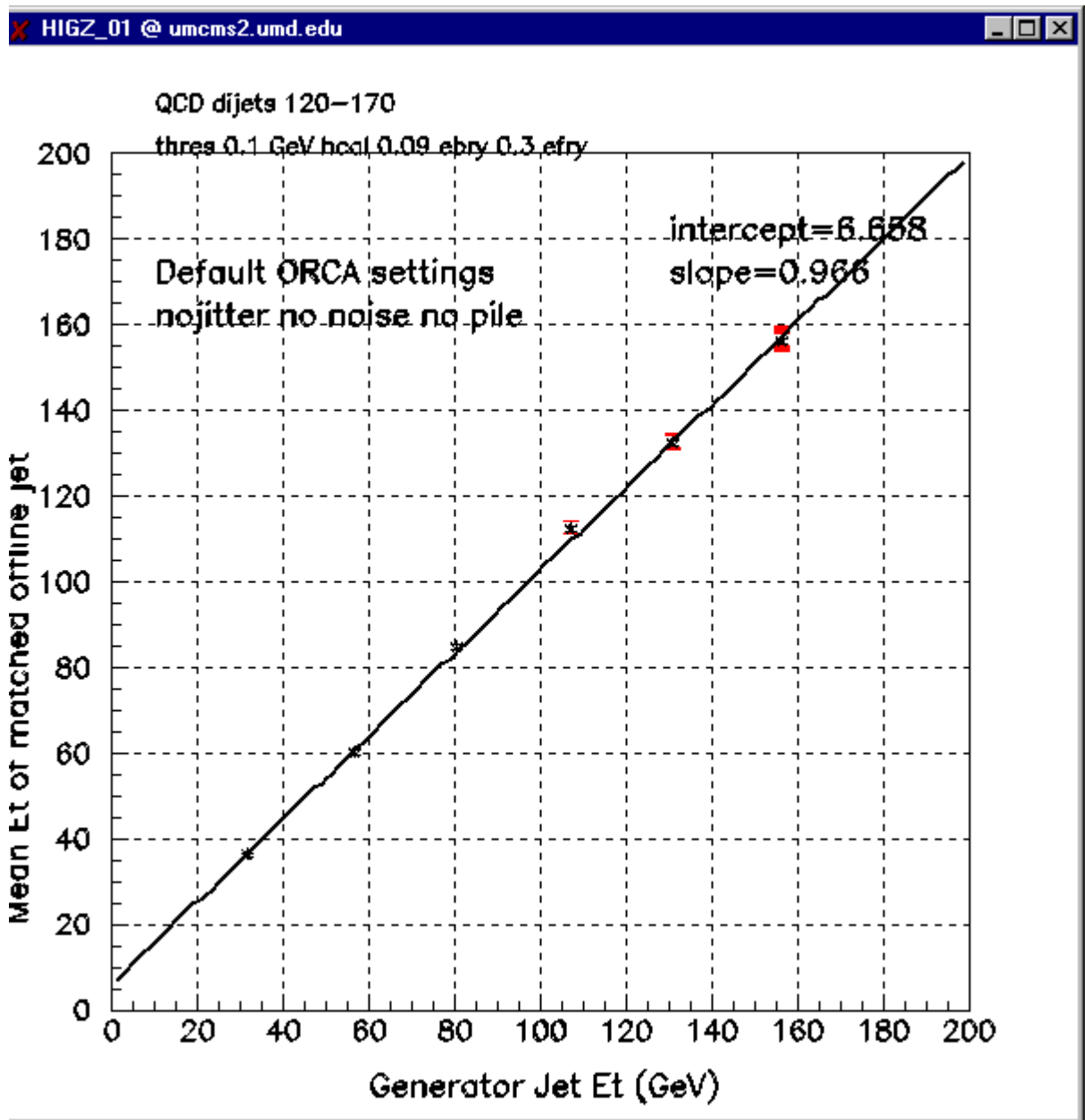| ID		103
ENTRIES		3045
0.00	0.00	0.00
0.00	0.357E+04	0.00
0.00	0.00	0.00

eta 0.4

Effect on Jet Energy Resolution
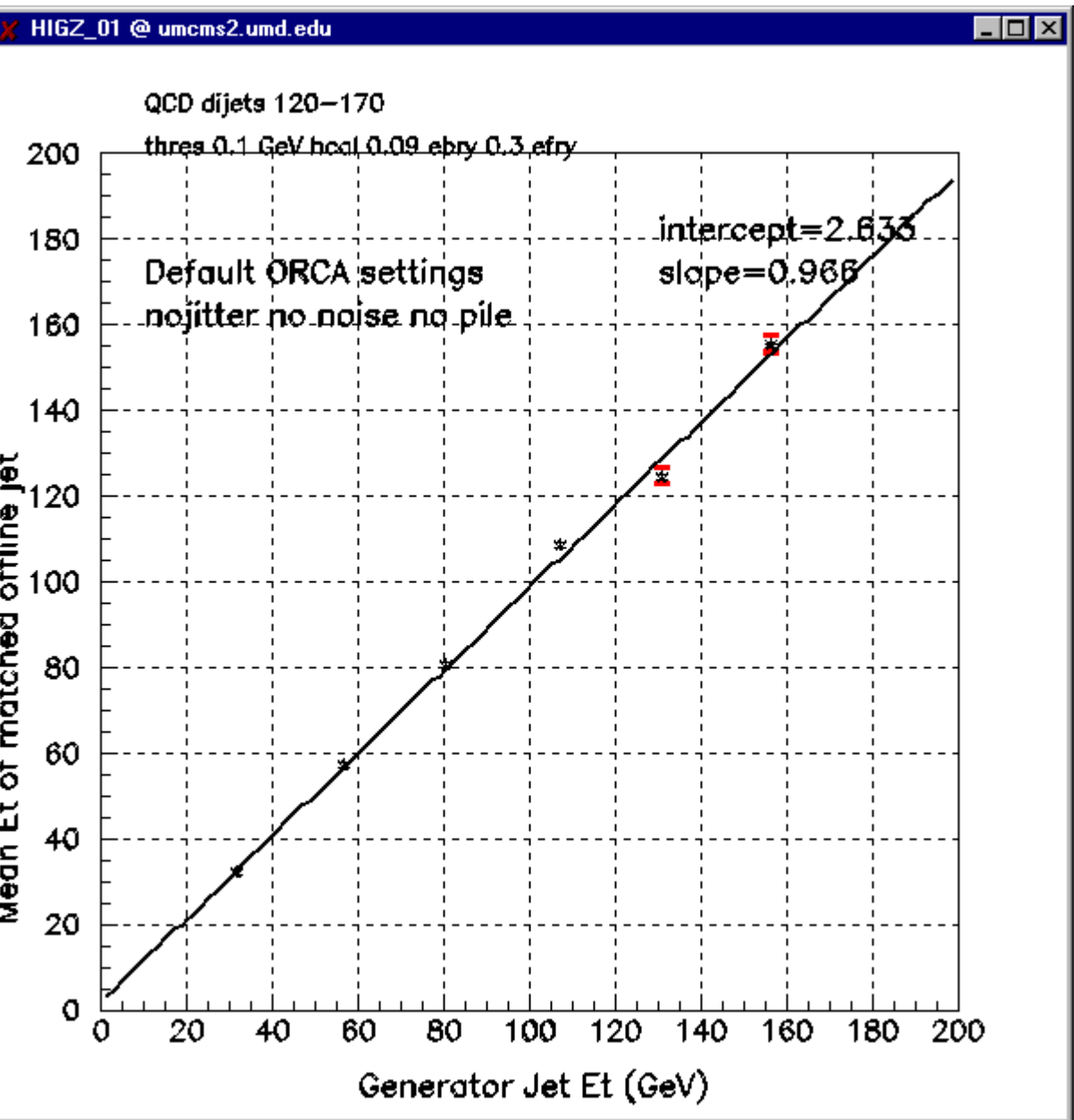
energy scale with old HCAL pulse shape for jets with 3<eta<5, full intime and out-of-time pileup (from some qqH events Shuichi gave me)
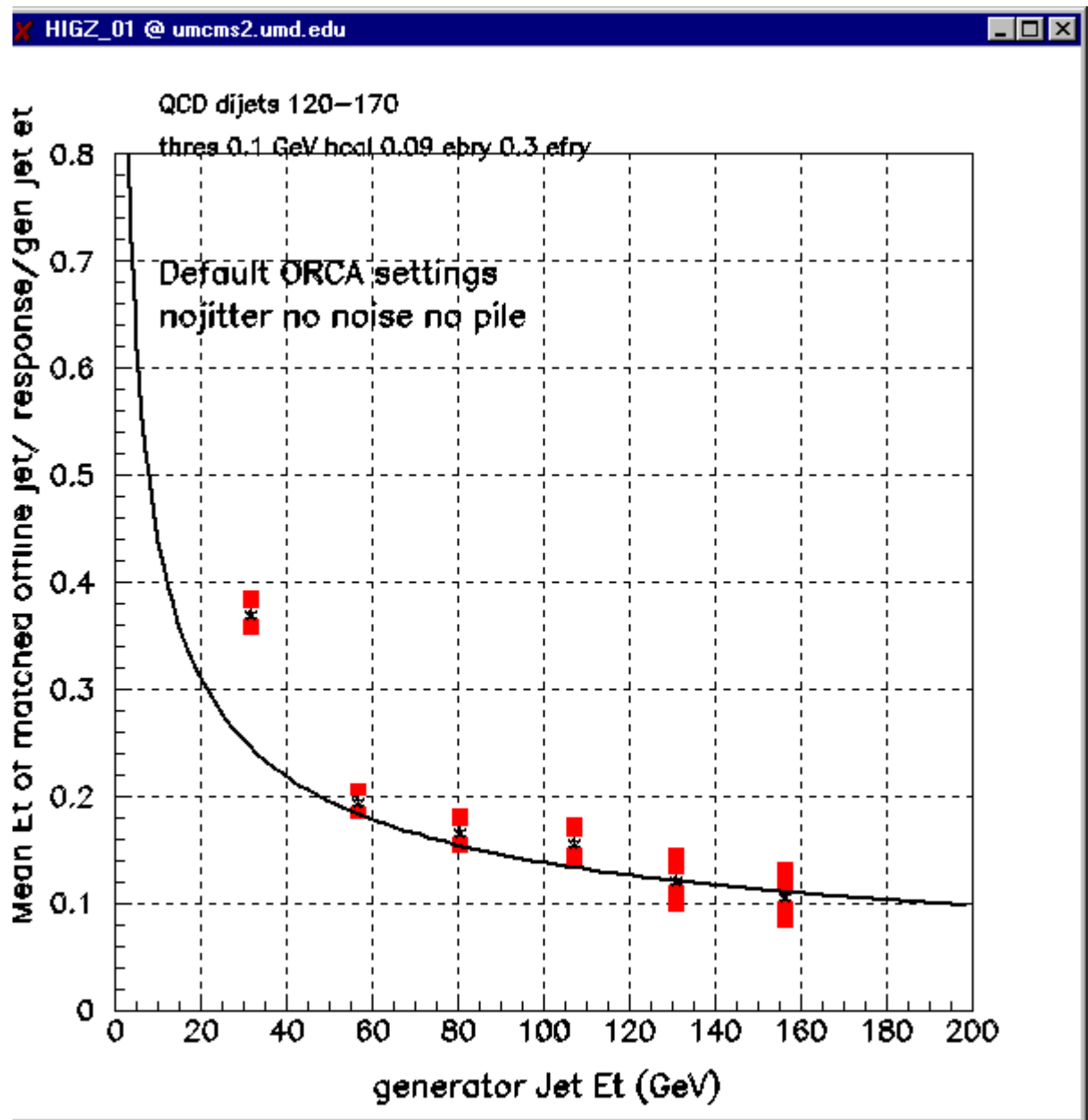
Jet Energy Resolution

old HCAL pulse shape

Jet Energy Resolution

new pulse shape

Jet Energy Resolution

QCD dijets 120-170

thres 0.1 GeV hcal 0.09 ebry 0.3 efry

Default ORCA settings
nojitter no noise no pile

new pulse shape